

Daniel Balint

List of Publications by Year in Descending Order

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The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

129
papers

2,697
citations

30
h-index

47
g-index

138
ext. papers

3,158
ext. citations

4.2
avg, IF

5.5
L-index

#	Paper	IF	Citations
129	The effect of strain rate asymmetry on the Bauschinger effect: A discrete dislocation plasticity analysis. <i>Journal of Materials Research and Technology</i> , 2022 , 16, 1904-1918	5.5	0
128	Clarification of the effect of temperature and strain rate on workpiece deformation behaviour in metal forming processes. <i>International Journal of Machine Tools and Manufacture</i> , 2021 , 171, 103815	9.4	4
127	On the Origin of Plastic Deformation and Surface Evolution in Nano-Fretting: A Discrete Dislocation Plasticity Analysis. <i>Materials</i> , 2021 , 14,	3.5	2
126	Advancing mechanical recycling of multilayer plastics through finite element modelling and environmental policy. <i>Resources, Conservation and Recycling</i> , 2021 , 166, 105371	11.9	11
125	On the origin of microstructural discontinuities in sliding contacts: A discrete dislocation plasticity analysis. <i>International Journal of Plasticity</i> , 2021 , 138, 102942	7.6	5
124	A fast efficient multi-scale approach to modelling the development of hydride microstructures in zirconium alloys. <i>Computational Materials Science</i> , 2021 , 190, 110279	3.2	0
123	A numerical investigation of interfacial and channelling crack growth rates under low-cycle fatigue in bi-layer materials relevant to cultural heritage. <i>Journal of Cultural Heritage</i> , 2021 , 49, 70-78	2.9	3
122	Fracture toughness of bone at the microscale. <i>Acta Biomaterialia</i> , 2021 , 121, 475-483	10.8	7
121	Plasticity of zirconium hydrides: a coupled edge and screw discrete dislocation model. <i>Journal of the Mechanics and Physics of Solids</i> , 2021 , 147, 104219	5	1
120	How would the deformation bands affect recrystallization in pure aluminium?. <i>Materials and Design</i> , 2021 , 209, 109960	8.1	1
119	Plastic relaxation and solute segregation to ϵ Nb second phase particles in Zr-Nb alloys: A discrete dislocation plasticity study. <i>Journal of the Mechanics and Physics of Solids</i> , 2021 , 156, 104581	5	0
118	Deformation and fracture of zirconium hydrides during the plastic straining of Zr-4. <i>MRS Advances</i> , 2020 , 5, 559-567	0.7	0
117	Investigating spatio-temporal deformation in single crystal Ni-based superalloys using in-situ diffraction experiments and modelling. <i>Materialia</i> , 2020 , 9, 100635	3.2	1
116	Discrete dislocation, crystal plasticity and experimental studies of fatigue crack nucleation in single-crystal nickel. <i>International Journal of Plasticity</i> , 2020 , 126, 102615	7.6	20
115	A study on central crack formation in cross wedge rolling. <i>Journal of Materials Processing Technology</i> , 2020 , 279, 116549	5.3	16
114	Effect of strain rate on tensile mechanical properties of high-purity niobium single crystals for SRF applications. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2020 , 797, 140258	5.3	3
113	A new hardness formula incorporating the effect of source density on indentation response: A discrete dislocation plasticity analysis. <i>Surface and Coatings Technology</i> , 2019 , 374, 763-773	4.4	14

112	Reconstruction of historical temperature and relative humidity cycles within Knole House, Kent. <i>Journal of Cultural Heritage</i> , 2019 , 39, 212-220	2.9	2
111	Development of similarity-based scaling criteria for creep age forming of large/extra-large panels. <i>International Journal of Advanced Manufacturing Technology</i> , 2019 , 101, 1537-1551	3.2	1
110	The dislocation configurational energy density in discrete dislocation plasticity. <i>Journal of the Mechanics and Physics of Solids</i> , 2019 , 129, 39-60	5	22
109	A discrete crack dynamics model of toughening in brittle polycrystalline material by crack deflection. <i>Engineering Fracture Mechanics</i> , 2019 , 214, 95-111	4.2	4
108	Embrittlement of an elasto-plastic medium by an inclusion. <i>International Journal of Fracture</i> , 2019 , 216, 87-100	2.3	4
107	Toughness measurements of a Cr martensitic high alloy steel susceptible to clinking. <i>Proceedings of the Institution of Mechanical Engineers, Part L: Journal of Materials: Design and Applications</i> , 2019 , 233, 63-72	1.3	
106	Microstructural effects on strain rate and dwell sensitivity in dual-phase titanium alloys. <i>Acta Materialia</i> , 2019 , 162, 136-148	8.4	36
105	A phase field model of pressure-assisted sintering. <i>Journal of the European Ceramic Society</i> , 2019 , 39, 173-182	6	17
104	Discrete crack dynamics: A planar model of crack propagation and crack-inclusion interactions in brittle materials. <i>International Journal of Solids and Structures</i> , 2018 , 152-153, 12-27	3.1	8
103	Slip transfer across phase boundaries in dual phase titanium alloys and the effect on strain rate sensitivity. <i>International Journal of Plasticity</i> , 2018 , 104, 23-38	7.6	55
102	Deformation behaviour of [001] oriented MgO using combined in-situ nano-indentation and micro-Laue diffraction. <i>Acta Materialia</i> , 2018 , 145, 516-531	8.4	8
101	An analysis of the tooth stress distribution of forged bi-metallic gears. <i>Proceedings of the Institution of Mechanical Engineers, Part C: Journal of Mechanical Engineering Science</i> , 2018 , 232, 124-139	1.3	8
100	An investigation of the mechanical behavior of three-dimensional low expansion lattice structures fabricated via laser printing. <i>Composite Structures</i> , 2018 , 206, 80-94	5.3	2
99	Temperature-dependent plastic hysteresis in highly confined polycrystalline Nb films. <i>Modelling and Simulation in Materials Science and Engineering</i> , 2018 , 26, 025005	2	1
98	Cracking in paintings due to relative humidity cycles. <i>Procedia Structural Integrity</i> , 2018 , 13, 379-384	1	5
97	Analysis of an as-cast high Si slab to elucidate fundamental causes of the fracture mechanism: Clinking. <i>Procedia Structural Integrity</i> , 2018 , 13, 1447-1452	1	
96	Instabilities of High Speed Dislocations. <i>Physical Review Letters</i> , 2018 , 121, 145502	7.4	10
95	On the use of HCP and FCC RVE structures in the simulation of powder compaction. <i>Journal of Strain Analysis for Engineering Design</i> , 2018 , 53, 338-352	1.3	

94	Test-piece design for experimental and numerical evaluation of damage in relation to spatial triaxial stress inversion. <i>International Journal of Damage Mechanics</i> , 2017 , 26, 588-607	3	7
93	Optimal shunt parameters for maximising wave attenuation with periodic piezoelectric patches. <i>Journal of Intelligent Material Systems and Structures</i> , 2017 , 28, 108-123	2.3	2
92	Investigation of slip transfer across HCP grain boundaries with application to cold dwell facet fatigue. <i>Acta Materialia</i> , 2017 , 127, 43-53	8.4	48
91	A unifying scaling for the Bauschinger effect in highly confined thin films: a discrete dislocation plasticity study. <i>Modelling and Simulation in Materials Science and Engineering</i> , 2017 , 25, 054003	2	4
90	Mechanistic basis of temperature-dependent dwell fatigue in titanium alloys. <i>Journal of the Mechanics and Physics of Solids</i> , 2017 , 107, 185-203	5	23
89	In situ stable crack growth at the micron scale. <i>Nature Communications</i> , 2017 , 8, 108	17.4	33
88	Discrete Dislocation Plasticity Modeling of Hydrides in Zirconium under Thermal Cycling. <i>MRS Advances</i> , 2017 , 2, 3353-3358	0.7	4
87	The injection of a screw dislocation into a crystal: Atomistics vs. continuum elastodynamics. <i>Journal of the Mechanics and Physics of Solids</i> , 2017 , 98, 366-389	5	7
86	A unified constitutive model for asymmetric tension and compression creep-ageing behaviour of naturally aged Al-Cu-Li alloy. <i>International Journal of Plasticity</i> , 2017 , 89, 130-149	7.6	73
85	A Dynamic Discrete Dislocation Plasticity study of elastodynamic shielding of stationary cracks. <i>Journal of the Mechanics and Physics of Solids</i> , 2017 , 98, 1-11	5	12
84	A new design of friction test rig and determination of friction coefficient when warm forming an aluminium alloy. <i>Procedia Engineering</i> , 2017 , 207, 2274-2279		6
83	The effect of temperature on the elastic precursor decay in shock loaded FCC aluminium and BCC iron. <i>International Journal of Plasticity</i> , 2017 , 96, 135-155	7.6	44
82	Dwell fatigue in two Ti alloys: An integrated crystal plasticity and discrete dislocation study. <i>Journal of the Mechanics and Physics of Solids</i> , 2016 , 96, 411-427	5	40
81	Measuring the band structures of periodic beams using the wave superposition method. <i>Journal of Sound and Vibration</i> , 2016 , 382, 158-178	3.9	8
80	A method of coupling discrete dislocation plasticity to the crystal plasticity finite element method. <i>Modelling and Simulation in Materials Science and Engineering</i> , 2016 , 24, 045007	2	12
79	Modelling of austenite formation during heating in boron steel hot stamping processes. <i>Journal of Materials Processing Technology</i> , 2016 , 237, 394-401	5.3	27
78	Experimental characterisation of the effects of thermal conditions on austenite formation for hot stamping of boron steel. <i>Journal of Materials Processing Technology</i> , 2016 , 231, 254-264	5.3	27
77	First-principles calculation of the elastic dipole tensor of a point defect: Application to hydrogen in Zirconium. <i>Physical Review B</i> , 2016 , 94,	3.3	19

76	Methodology for Modelling Diffusion Bonding in Powder Forging. <i>Key Engineering Materials</i> , 2016 , 716, 817-823	0.4	
75	Rate sensitivity in discrete dislocation plasticity in hexagonal close-packed crystals. <i>Acta Materialia</i> , 2016 , 107, 17-26	8.4	33
74	A parametric study of the mechanical and dispersion properties of cubic lattice structures. <i>International Journal of Solids and Structures</i> , 2016 , 91, 55-71	3.1	15
73	Discrete dislocation and crystal plasticity analyses of load shedding in polycrystalline titanium alloys. <i>International Journal of Plasticity</i> , 2016 , 87, 15-31	7.6	44
72	A study on the effect of stress state on damage evolution in hot deformation of free cutting steels using double notched bars. <i>Philosophical Magazine</i> , 2016 , 96, 2176-2203	1.6	2
71	An investigation of cutting resistance in stretched polymer films. <i>Procedia Structural Integrity</i> , 2016 , 2, 190-196	1	1
70	An inverse method to determine the dispersion curves of periodic structures based on wave superposition. <i>Journal of Sound and Vibration</i> , 2015 , 350, 41-72	3.9	23
69	Attenuation of the dynamic yield point of shocked aluminum using elastodynamic simulations of dislocation dynamics. <i>Physical Review Letters</i> , 2015 , 114, 174301	7.4	46
68	An investigation of the mechanical fatigue behavior of low thermal expansion lattice structures. <i>International Journal of Fatigue</i> , 2015 , 81, 238-248	5	0
67	The Role of Homogeneous Nucleation in Planar Dynamic Discrete Dislocation Plasticity. <i>Journal of Applied Mechanics, Transactions ASME</i> , 2015 , 82,	2.7	11
66	Elastodynamic image forces on dislocations. <i>Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences</i> , 2015 , 471, 20150433	2.4	11
65	The mechanisms governing the activation of dislocation sources in aluminum at different strain rates. <i>Journal of the Mechanics and Physics of Solids</i> , 2015 , 84, 273-292	5	48
64	A discrete dislocation plasticity study of the micro-cantilever size effect. <i>Acta Materialia</i> , 2015 , 88, 271-282		51
63	Investigation of the effects of thermal gradients present in Gleeble high-temperature tensile tests on the strain state for free cutting steel. <i>Journal of Strain Analysis for Engineering Design</i> , 2014 , 49, 521-532	1.3	18
62	Numerical study of the solution heat treatment, forming, and in-die quenching (HFQ) process on AA5754. <i>International Journal of Machine Tools and Manufacture</i> , 2014 , 87, 39-48	9.4	111
61	The Cohesive Zone Model Applied to Blunt Cracks 2014 , 3, 313-317		3
60	In-situ Micro-tensile Testing and X-ray Micro-tomography based FE Modeling of Open-cell Metal Foam Struts and Sandwich Panels 2014 , 4, 197-202		2
59	An investigation into the forging of Bi-metal gears. <i>Journal of Materials Processing Technology</i> , 2014 , 214, 2248-2260	5.3	31

58	The development of continuum damage mechanics-based theories for predicting forming limit diagrams for hot stamping applications. <i>International Journal of Damage Mechanics</i> , 2014 , 23, 684-701	3	57
57	Theoretical Analysis and Computational Simulation of Advanced Structured Materials. <i>Advances in Condensed Matter Physics</i> , 2014 , 2014, 1-2	1	2
56	Solution Heat Treatment, Forming and In-Die Quenching of a Commercial Sheet Magnesium Alloy into a Complex-Shaped Component: Experimentation and FE Simulation. <i>Key Engineering Materials</i> , 2014 , 622-623, 596-602	0.4	3
55	In situ microtensile testing and X-ray microtomography-based finite element modelling of open-cell metal foam struts and sandwich panels. <i>Journal of Strain Analysis for Engineering Design</i> , 2014 , 49, 592-606	1.3	10
54	Materials Modelling for Selective Heating and Press Hardening of Boron Steel Panels with Graded Microstructures. <i>Procedia Engineering</i> , 2014 , 81, 1675-1681		14
53	Predicting Effect of Temperature, Strain Rate and Strain Path Changes on Forming Limit of Lightweight Sheet Metal Alloys. <i>Procedia Engineering</i> , 2014 , 81, 736-741		15
52	A Novel Forming Process for Powder Metallurgy of Superalloys. <i>Key Engineering Materials</i> , 2014 , 622-623, 833-839	0.4	1
51	Dynamic Discrete Dislocation Plasticity. <i>Advances in Applied Mechanics</i> , 2014 , 93-224	10	9
50	Triaxiality Effect on Material Damage Evolution in Hot Rolling. <i>Key Engineering Materials</i> , 2014 , 622-623, 1041-1048	0.4	
49	Concept Validation for Selective Heating and Press Hardening of Automotive Safety Components with Tailored Properties. <i>Key Engineering Materials</i> , 2014 , 622-623, 1124-1131	0.4	5
48	The effects of regularity on the geometrical properties of Voronoi tessellations. <i>Physica A: Statistical Mechanics and Its Applications</i> , 2014 , 406, 42-58	3.3	22
47	An inverse method for extracting the mechanical properties of the constituent materials of a multilayer from nanoindentation data. <i>Computational Materials Science</i> , 2013 , 68, 384-390	3.2	11
46	A new parameter for modelling three-dimensional damage evolution validated by synchrotron tomography. <i>Acta Materialia</i> , 2013 , 61, 7616-7623	8.4	17
45	Prediction of delamination in multilayer artist paints under low amplitude fatigue loading. <i>Engineering Fracture Mechanics</i> , 2013 , 112-113, 41-57	4.2	11
44	The effect of morphological imperfections on damage in 3D FE analysis of open-cell metal foam core sandwich panels. <i>International Journal of Mechanical Sciences</i> , 2013 , 75, 377-387	5.5	2
43	A new experimental method for identifying the conditions necessary for diffusion bonding in free cutting steels. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2013 , 586, 25-30	5.3	3
42	Modelling of dominant softening mechanisms for Ti-6Al-4V in steady state hot forming conditions. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2013 , 559, 352-358	5.3	60
41	A dynamic discrete dislocation plasticity method for the simulation of plastic relaxation under shock loading. <i>Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences</i> , 2013 , 469, 20130141	2.4	46

40	Numerical Investigation on the Hot Forming and Cold-Die Quenching of an Aluminium-Magnesium Alloy into a Complex Component. <i>Materials Science Forum</i> , 2013 , 765, 368-372	0.4	5
39	Micromechanical Modelling of Void Healing. <i>Advanced Structured Materials</i> , 2013 , 1-8	0.6	2
38	An Investigation of the Mechanical Properties of Open Cell Aluminium Foam Struts: Microtensile Testing and Modelling. <i>Advanced Structured Materials</i> , 2013 , 53-63	0.6	
37	Investigation of deformation and failure features in hot stamping of AA6082: Experimentation and modelling. <i>International Journal of Machine Tools and Manufacture</i> , 2012 , 53, 27-38	9.4	193
36	An efficient closed-form method for determining interfacial heat transfer coefficient in metal forming. <i>International Journal of Machine Tools and Manufacture</i> , 2012 , 56, 102-110	9.4	63
35	Experimental and numerical investigation of localized thinning in hydroforming of micro-tubes. <i>European Journal of Mechanics, A/Solids</i> , 2012 , 31, 67-76	3.7	28
34	The reliability of defect sentencing in manual ultrasonic inspection. <i>NDT and E International</i> , 2012 , 51, 101-110	4.1	6
33	Investigation of FE model size definition for surface coating application. <i>Chinese Journal of Mechanical Engineering (English Edition)</i> , 2012 , 25, 860-867	2.5	2
32	A controlled Poisson Voronoi tessellation for grain and cohesive boundary generation applied to crystal plasticity analysis. <i>Computational Materials Science</i> , 2012 , 64, 84-89	3.2	57
31	Three-dimensional virtual grain structure generation with grain size control. <i>Mechanics of Materials</i> , 2012 , 55, 89-101	3.3	19
30	Scale effects in necking. <i>EPJ Web of Conferences</i> , 2012 , 26, 01008	0.3	2
29	Cohesive zone representation and junction partitioning for crystal plasticity analyses. <i>International Journal for Numerical Methods in Engineering</i> , 2012 , 92, 715-733	2.4	7
28	Determining unified constitutive equations for modelling hot forming of steel 2012 , 180-209		
27	Quantifying damage accumulation during the hot deformation of free-cutting steels using ultra-fast synchrotron tomography. <i>IOP Conference Series: Materials Science and Engineering</i> , 2012 , 33, 012038	0.4	6
26	Microstructure evolution in metal forming processes 2012 ,		21
25	An integrated scheme for crystal plasticity analysis: Virtual grain structure generation. <i>Computational Materials Science</i> , 2011 , 50, 2854-2864	3.2	42
24	Controlled Poisson Voronoi tessellation for virtual grain structure generation: a statistical evaluation. <i>Philosophical Magazine</i> , 2011 , 91, 4555-4573	1.6	38
23	Development and determination of unified viscoplastic constitutive equations for predicting microstructure evolution in hot forming processes. <i>International Journal of Mechatronics and Manufacturing Systems</i> , 2011 , 4, 387	0.8	0

22	Formability and failure mechanisms of AA2024 under hot forming conditions. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2011 , 528, 2648-2656	5.3	105
21	Anisotropic TGO rumpling in EB-PVD thermal barrier coatings under in-phase thermomechanical loading. <i>Acta Materialia</i> , 2011 , 59, 2544-2555	8.4	25
20	MODELING OF FAILURE FEATURES FOR TiN COATINGS WITH DIFFERENT SUBSTRATE MATERIALS. <i>Journal of Multiscale Modeling</i> , 2011 , 03, 49-64	0.8	5
19	AUTOMATED CALIBRATION OF A VOID CLOSURE MODEL FOR HIGH-TEMPERATURE DEFORMATION. <i>Journal of Multiscale Modeling</i> , 2011 , 03, 79-90	0.8	3
18	Experimental and Numerical Studies on the Formability of Materials in Hot Stamping and Cold Die Quenching Processes 2011 ,		14
17	Crystal Plasticity Finite Element Process Modeling for Hydro-forming Micro-tubular Components. <i>Chinese Journal of Mechanical Engineering (English Edition)</i> , 2011 , 24, 78	2.5	5
16	QUANTIFYING AND IMPROVING THE RELIABILITY OF NDE THROUGH MODELING MANUAL ULTRASONIC INSPECTIONS 2010 ,		1
15	Hybrid forming processes for production of lightweight high strength automotive panel parts. <i>International Heat Treatment and Surface Engineering</i> , 2010 , 4, 160-165		6
14	Review of Materials and Process Modeling Techniques for Creep Age Forming. <i>Advanced Materials Research</i> , 2010 , 154-155, 1439-1445	0.5	
13	A CRYSTAL PLASTICITY STUDY OF THE NECKING OF MICRO-FILMS UNDER TENSION. <i>Journal of Multiscale Modeling</i> , 2009 , 01, 331-345	0.8	11
12	Characterization of EB-PVD yttrium-stabilised zirconia by nanoindentation. <i>Surface and Coatings Technology</i> , 2009 , 203, 1743-1747	4.4	17
11	A virtual crystal plasticity simulation tool for micro-forming. <i>Procedia Engineering</i> , 2009 , 1, 75-78		9
10	Discrete dislocation plasticity analysis of the grain size dependence of the flow strength of polycrystals. <i>International Journal of Plasticity</i> , 2008 , 24, 2149-2172	7.6	90
9	Size effects in single asperity frictional contacts. <i>Modelling and Simulation in Materials Science and Engineering</i> , 2007 , 15, S97-S108	2	14
8	Size effects in uniaxial deformation of single and polycrystals: a discrete dislocation plasticity analysis. <i>Modelling and Simulation in Materials Science and Engineering</i> , 2006 , 14, 409-422	2	80
7	Influence of bond coat thickness on the cyclic rumpling of thermally grown oxides. <i>Acta Materialia</i> , 2006 , 54, 1815-1820	8.4	47
6	Discrete dislocation plasticity analysis of the wedge indentation of films. <i>Journal of the Mechanics and Physics of Solids</i> , 2006 , 54, 2281-2303	5	72
5	An analytical model of rumpling in thermal barrier coatings. <i>Journal of the Mechanics and Physics of Solids</i> , 2005 , 53, 949-973	5	154

4	A discrete dislocation plasticity analysis of grain-size strengthening. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2005 , 400-401, 186-190	5.3	42
3	Discrete dislocation plasticity analysis of crack-tip fields in polycrystalline materials. <i>Philosophical Magazine</i> , 2005 , 85, 3047-3071	1.6	14
2	Undulation instability of a compressed elastic film on a nonlinear creeping substrate. <i>Acta Materialia</i> , 2003 , 51, 3965-3983	8.4	67
1	Mode II Edge Delamination of Compressed Thin Films. <i>Journal of Applied Mechanics, Transactions ASME</i> , 2001 , 68, 725-730	2.7	18